

well colour'd Yellow, and further and further from the edge, as the liquor grew thicker and thicker, this tincture appear'd deeper and deeper, so that near the blunt end, which was seven Inches from the edge and three Inches and an half thick; it was of a deep and well colour'd Red. Now, the clearer and purer this tincture be, the more lovely will the deep Scarlet be; and the fouler the tincture be, the more dirty will the Red appear; so that some dirty tinctures have afforded their deepest Red much of the colour of burnt Oker or *Spanish* brown; others as lovely a colour as *Vermilion*; and some much brighter; but several others, according as the tinctures were worse or more foul, exhibited various kinds of Reds, of very differing degrees.

The other of these Wedges, I fill'd with a most lovely tincture of Copper, drawn from the filings of it, with spirit of *Urine*, and this Wedge held as the former against the Light, afforded all manner of Blues, from the faintest to the deepest, so that I was in good hope by these two, to have produc'd all the varieties of colours imaginable; for I thought by this means to have been able by placing the two *Parallelogram* sides together, and the edges contrary ways, to have so mov'd them to and fro one by another, as by looking through them in several places, and through several thick-nesses, I should have compounded, and consequently have seen all those colours, which by other like compositions of colours would have ensued.

But instead of meeting with what I look'd for, I met with somewhat more admirable; and that was, that I found my self utterly unable to see through them when placed both together, though they were transparent enough when asunder; and though I could see through twice the thick-ness, when both of them were fill'd with the same colour'd liquors, whether both with the Yellow, or both with the Blue, yet when one was fill'd with the Yellow, the other with the Blue, and both looked through, they both appear'd dark, onely when the parts near the tops were look'd through, they exhibited Greens, and those of very great variety, as I expected, but the Purples and other colours, I could not by any means make, whether I endeavour'd to look through them both against the Sun, or whether I plac'd them against the hole of a darkned room.

But notwithstanding this mis-guessing, I proceeded on with my trial in a dark room, and having two holes near one another, I was able, by placing my Wedges against them, to mix the ting'd Rays that past through them, and fell on a sheet of white Paper held at a convenient distance from them as I pleas'd; so that I could make the Paper appear of what colour I would, by varying the thickneses of the Wedges, and consequent-ly the tincture of the Rays that past through the two holes, and some-times also by varying the Paper, that is, instead of a white Paper, holding a gray, or a black piece of Paper.

Whence I experimentally found what I had before imagin'd, that all the varieties of colours imaginable are produc'd from several degrees of these two colours, namely, Yellow and Blue, or the mixture of them with light and darknes, that is, white and black. And all those almost infinite varieties which Limners and Painters are able to make by com-

pounding

pounding those several colours they lay on their S thing else, but some *compositum*, made up of some these four.

Now, whereas it may here again be objected, that be made out of the Yellows, added together, or la quantity, nor can the Yellows be made out of the ver so thin; and as for the addition of White or I but either whiten or darken the colours to which t at all make them of any other kind of colour: as by being temper'd with White Lead, does not at a but onely there is made a whiter kind of Red. N though laid never so thick, produce the colour of it be temper'd with Black, does it at all make a R temper'd with White, it will not afford a fainter ki *mastic*, but onely a whiten'd Yellow; nor will t deepned after the manner I speak of, as *Indico* will Blue as *Ultramarine* or *Bise*; nor will it, temper'd w ford a Green, though each of them be never so much

To which I answer, that there is a great differen colour and whitening of it; for *diluting* a colour, i parts more thin, so that the ting'd light, which those ting'd bodies, does not receive so deep a tin a colour is onely an intermixing of many clea among the same ting'd parts; deepning also, and d colour, are very different; for deepning a colour pas through a greater quantity of the same tinging or blacking a colour, is onely interposing a multi spots among the same ting'd parts, or placing the light.

First therefore, as to the former of these operatio deepning, most of the colours us'd by the Limner capable of, to wit, *Vermilion* and *Red-lead*, and *Oker* parts are so exceeding small, that the most curious are not able to separate them into parts actually c ting'd particles are; for looking on the most *milion*, and *Oker*, and *Red-lead*, I could perceive *corpuscles* of the bodies they left were compounded is, they seem'd to be small pieces compounded c ting'd parts: each piece seeming almost like a piece Crystal all flaw'd; so that unless the Grindstone them into smaller pieces then those flaw'd partic pounded that ting'd mote I could see with my *M* impossible to *dilute* the colour by grinding, which have will not reach to do in *Vermilion* or *Oker*, the all, or very hardly be *diluted*.

Other colours indeed, whose ting'd particles ar smaller, by grinding their colour, may be *diluted*

M 2